

**DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Scheduled Inspection**

N209640828

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| <b>FACILITY:</b> OMIMEX ENERGY- CLAYBANKS 2 FACILITY   | <b>SRN / ID:</b> N2096               |
| <b>LOCATION:</b> 5954 W. Arthur Road, NEW ERA  | <b>DISTRICT:</b> Grand Rapids        |
| <b>CITY:</b> NEW ERA   | <b>COUNTY:</b> OCEANA                |
| <b>CONTACT:</b> Ken Prior , Operations Manager - Michigan  | <b>ACTIVITY DATE:</b> 07/18/2017     |
| <b>STAFF:</b> Chris Robinson   | <b>COMPLIANCE STATUS:</b> Compliance |
| <b>SUBJECT:</b> FY '17 on-site inspection to determine the facility's compliance status with PTI No. 201-89A and other applicable air quality rules and regulations. |                                      |
| <b>RESOLVED COMPLAINTS:</b>  |                                      |

Omimex Energy – Claybanks 2 Facility (Claybanks) is located at 5954 West Arthur Road in New Era, MI. AQD staff Chris Robinson (CR) arrived at this location at approximately 10:00 am on July 18, 2017 to conduct a scheduled and announced site inspection to determine compliance with applicable air rules and regulations, including the facility's Permit to Install (PTI) No. 201-89A. This facility is typically unmanned or not operating, therefore prior notification is required to ensure proper staff is on-site and available. Weather conditions were approximately 70°F with westerly winds at approximately 4 mph ([www.weatherunderground.com](http://www.weatherunderground.com)). CR met with Mr. Ken Prior, Operations Manager announcing intent to inspect along with proper identification.

### **FACILITY/PROCESS DESCRIPTION**

Claybank's is a crude petroleum and natural gas extraction facility. The extracted natural gas is considered "sour gas" because the facility does not remove H<sub>2</sub>S from the gas stream prior to the gas leaving the facility through the pipeline. The facility has several storage tanks, heaters, compressors, a glycol dehydrator, a vapor recovery unit, and an engine to run the compressors required to separate the oil and gas. Omimex has a Title V Opt-out permit because the facility's potential to emit (PTE) of NO<sub>x</sub> from the single on-site engine is greater than 100 tpy.

The facility extracts crude oil from twelve local wells and separates the sour gas from the oil. The crude oil is stored in two 400-gallon atmospheric tanks, exempt per Rule 284(2)(f), and eventually hauled away by truck. Product transfer is controlled by a vapor recovery system (VRU). The sour gas collected through the VRU is either put back into the production system or piped to a sweetening/distribution facility. The facility separates the sour gas from the crude oil in the following four stages:

#### **STAGE #1**

During the initial stage crude oil/sour gas is pumped from the wells and sent to one of six high-pressure separators. The separators lower the pressure so that the sour gas can separate from the oil. Every time the pressure is lowered during each stage, the oil compresses and the facility is able to extract more sour gas, increasing their production rate. These separators can handle gas that enters at up to 1,440 lbs. of pressure. After stage #1, separated crude oil is transferred, via pipe, to the on-site storage tanks while the remaining oil/sour gas mixture continues to the heated treaters.

#### **STAGE #2**

Stage #2 consists of two 1.86 MMBtu/hr natural gas fired heated treaters, exempt per Rule 282(2)(b)(i), which are also called low-pressure separators. The treaters are heated to approximately 90°F – 100°F to help the process. The treaters continue to lower the pressure of the gas, to approximately 30 lbs., preparing it for stage #3. Oil separated during this stage is again transferred to the storage tanks while the sour gas continuous to the compressor.

#### **STAGE #3**

The engine is equipped with a three-stage compressor. At each of the three stages the pressure is increased. The purpose of the compressor engine is to correct the pressure of the gas for pipeline transfer. To enter the pipeline, the gas must be at approximately 900 lbs. of pressure.

The facility also utilizes a small amine unit sweetening the sour gas for the compressor engine fuel. The amine unit operates in an enclosed system and does not emit any hydrogen sulfide. The extracted hydrogen sulfide is mixed with produced gas and delivered into the sour gas pipeline. The facility uses propane as a backup which is stored in an 18,000-gallon storage tank exempt per Rule 282(2)(b).

#### **STAGE #4**

Liquid must be removed before the gas enters the pipeline. At this stage, all the sour gas enters the glycol dehydrator (dehydrating tower) which is a closed loop system. This tower runs the gas through a series of baffles that extracts all the water. The water is then separated from the glycol using a re-boiler.

### **COMPLIANCE EVALUATION**

#### **PTI No. 201-89A**

##### **- Emission Unit EUENGINE01**

The facility's compressor engine is a Waukesha three stage 644hp engine with no add-on controls. The engine's installation date is unknown, however according to Mr. Prior the engine was on-site when Omimex purchased the facility in 1992 and has not been modified since. Therefore, the engine is not subject to NSPS 40CFR Part 60 Subpart JJJJ because it was installed prior to 12/2006. The engine may be subject to the "RICE MACT" 40CFR Part 63 Subpart ZZZZ. However, AQD does not have delegation of this Area source MACT. Engine changeouts require AQD notification. Engine maintenance and repairs are conducted on-site, therefore the engine has never been changed-out.

EUENGINE01 is subject to an annual 12-month rolling NOx emission limit of 85.4 tons and an annual 12-month rolling 29.5 MMscf natural gas usage limit. Attached records (**Attachment A**) indicate that the engine last operated in February 2017 with a 12-month rolling NOx emission limit of 32.217 tons and natural gas usage of 29.386 MMscf. Rolling 12-month records for February 2017 also indicate that monthly natural gas usage from April 2016 through February 2017 was less than 1MMscf for each month. NOx testing was not requested during this inspection.

Mr. Prior provided a current Preventative Maintenance/Malfunction Abatement Plan (**Attachment B**) as required by special condition 1.3 and the following records for EUENGINE01 as required by special conditions 1.8 -1.12:

- Examples of Maintenance logs
- Fuel Use Records
- NOx Emission calculations

Records were current and complete.

The facility has installed and properly maintains a meter for continuously monitoring fuel usage. Records are provided in **Attachment A**.

##### **- Emission Unit EUDEHY**

Per special condition 2.1 of PTI No. 201-89A the facility is required to comply with all provisions of 40 CFR Part 63 Subpart HH for area sources with a triethylene glycol dehydrator.

The facility utilizes a 2 gallon/minute triethylene glycol dehydrator equipped with a 250,000 Btu/hr reboiler for extracting water vapor from the sour gas. The extracted water vapor and trace hydrocarbons are sent to temporary holding tank controlled by the VRU and eventually removed for disposal. The dehydrator appears to be exempt per Rule 288(2)(b)(i).

Past compliance evaluations for 63 Subpart HH have considered this facility exempt per 40 CFR 63.764(e)(i) & (ii):

(i) The actual annual average flowrate of natural gas to the glycol dehydration unit is less than 85 thousand standard cubic meters per day, as determined by the procedures specified in §63.772(b)(1) of this subpart; or

(ii) The actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 megagram per year, as determined by the procedures specified in §63.772 (b)(2) of this subpart.

The NESHAP 63.764(e)(i) & (ii) only exempts a facility from 63.764(d), not the entire rule. Therefore, the facility is subject to this rule. However, Claybank's is considered an area source for HAPS and AQD does not have Area source delegation for this MACT. CR discussed the facility's applicability status with respect to this rule with Mr. Prior.

CR also discussed with Mr. Prior that the facility may be able to demonstrate that they meet the "Black oil" facility exemption (63.760(e)(1)) for this rule. Black oil, as defined by the Rule, means hydrocarbon (petroleum) liquid

with an initial producing gas-to-oil ratio (GOR) less than 0.31 cubic meters per liter and API gravity less than 40 degrees. Applicability of this exemption was not discussed further.

**- Flexible Group FGFACILITY**

FGFACILITY is subject to an annual 12-month rolling NOx emission limit of 89.9 tons. Mr. Prior provided CR with current and complete NOx emission calculations (**Attachment A**), which are attached and summarized in the table below. Per discussions with Mr. Prior, except for flaring, the facility does not burn any sour gas on-site. The facility's flare appears exempt per Rule 282(2)(g).

| Year | Month     | 12-month rolling NOx Emissions (tons) |
|------|-----------|---------------------------------------|
| 2016 | July      | 33.205                                |
|      | August    | 34.552                                |
|      | September | 33.511                                |
|      | October   | 33.377                                |
|      | November  | 33.284                                |
|      | December  | 34.439                                |
| 2017 | January   | 34.812                                |
|      | February  | 34.042                                |
|      | *March    | 30.690                                |
|      | *April    | 27.718                                |
|      | *May      | 26.526                                |
|      | *June     | 23.436                                |

\* EUENGINE01 did not operate during these months.

Special Condition 3.3 (Testing) states that verification of H2S and/or sulfur content of the natural gas burned in FGFACILITY may be required, upon request of AQD. The AQD has not requested testing. However, the facility conducts this testing on their own for determining the BTUs of the natural gas for calculating NOx emissions. The most recent test was conducted on 12/21/2015. Laboratory analysis is provided in **Attachment C**.

**2016 MAERS Submittal**

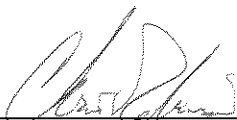
Emission units were properly reported to MAERS.

**COMPLIANCE DETERMINATION**

Based on observations and a records review made during this inspection, Omimex Energy – Claybanks 2 Facility appears to be compliant with PTI No. 201-89A and other applicable air rules and regulations.

Attachments

- A - Calculations
- B - Preventative Maintenance / Malfunction Abatement Plan
- C - Lab Analysis
- D - Maintenance Records

NAME 

DATE 8/24/2017

SUPERVISOR 